Decimal → Fraction

We can write rational numbers in a fraction form, such as $\frac{1}{8} = 0.125$. However, there are also rational numbers that will repeat itself forever, such as $\frac{3221}{555} = 5.8036036036036036\cdots$. (036 will repeat itself forever.) In this case, we will use the parentheses notation to write the number as $5.8(036)$ to show that the 036 within the parentheses will repeat forever. Please write a program that receives a decimal number as input and output that number as a fraction.

Input

A non-negative number in decimal form, dividing the decimal number into three parts: the number before the decimal point, the number behind the decimal point outside of the parentheses, and the number in the parentheses. (See example input.)

Output

A fraction number that is equivalent to the inputted decimal number. The numerator and the denominator should have a greatest common divisor of 1, so that the fraction is in its simplest terms. (See example output.)

Example

Decimal Number	Input (from keyboard)	Output (on screen)
7.	7,,0	7 / 1
0.	0,,0	0 / 1
0.5	0,5,0	1 / 2
0.08(3)	0,08,3	1 / 12
0.02(27)	0,02,27	1 / 44
123.456(789)	123,456,789	41111111 / 333000
987.(987)	987,,987	329000 / 333

Try to write the code with only the commands learnt in Chapter 2 (don't use if…)

Hint

You can use math.gcd(a,b) to find the greatest common divisor of a and b. For example, math.gcd(2431, 13277) will return 187, therefore: $\frac{243}{13277} = \frac{2431/187}{13277/187} = \frac{13}{71}$.